



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2012-1329; Directorate Identifier 2012-NE-46-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Engine Alliance Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for certain Engine Alliance GP7270 and GP7277 turbofan engines. This proposed AD was prompted by damage to the high-pressure compressor (HPC) stage 7-9 spool caused by failure of the baffle plate feature on affected HPC stage 6 disks. This proposed AD would require initial and repetitive borescope inspections of the baffle plate feature and removal from service of the HPC stage 6 disk before further flight, if the plate is missing material. This proposed AD would also require mandatory removal from service of these HPC stage 6 disks at the next HPC module exposure. We are proposing this AD to prevent uncontained failure of the HPC stage 7-9 spool, uncontained engine failure, and damage to the airplane.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Engine Alliance, 411 Silver Lane, East Hartford, CT 06118, phone: 800-565-0140; website: <https://www.engineallianceportal.com>. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Martin Adler, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7157; fax: 781-238-7199; email: [martin.adler@faa.gov](mailto:martin.adler@faa.gov).

#### **SUPPLEMENTARY INFORMATION:**

##### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2012-1329; Directorate Identifier 2012-NE-46-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory,

economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We received reports of the baffle plate feature failing on HPC stage 6 disks, part number (P/N) 382-100-505-0 from high cycle fatigue. The failures resulted in material from the baffle plate feature causing damage to the HPC stage 7-9 spool, causing the spool to crack. Engine Alliance has introduced a redesigned HPC stage 6 disk with a different P/N, to eliminate the failures. This condition, if not corrected, could result in uncontained failure of the HPC stage 7-9 spool, uncontained engine failure, and damage to the airplane.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would require initial and repetitive borescope inspections of the HPC stage 6 disk baffle plate feature and removal from service of any HPC stage 6 disk, P/N 382-100-505-0, before further flight if the feature is missing any material. This proposed AD would also require mandatory removal from service of these HPC stage 6 disks at the next HPC module exposure, but no later than accumulating 6,800 cycles-since-new on the disk.

### **Costs of Compliance**

We estimate that this proposed AD would affect no engines installed on airplanes of U.S. registry, and the cost to U.S. operators to be \$0.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**Engine Alliance:** Docket No. FAA-2012-1329; Directorate Identifier 2012-NE-46-AD.

#### **(a) Comments Due Date**

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to Engine Alliance GP7270 and GP7277 turbofan engines with a high-pressure compressor (HPC) stage 6 disk, part number (P/N) 382-100-505-0, installed.

**(d) Unsafe Condition**

This AD was prompted by damage to the HPC stage 7-9 spool caused by failure of the baffle plate feature on affected HPC stage 6 disks. We are issuing this AD to prevent uncontained failure of the HPC stage 7-9 spool, uncontained engine failure, and damage to the airplane.

**(e) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(f) Borescope Inspections**

(1) For HPC stage 6 disks with fewer than 1,000 cycles- since- new (CSN) on the effective date of this AD, initially borescope inspect the baffle plate feature on the disk (360 degrees) before accumulating 1,500 CSN.

(2) For HPC stage 6 disks with 1,000 CSN or more on the effective date of this AD, initially borescope inspect the baffle plate feature on the disk (360 degrees) within the next 500 cycles-in-service (CIS).

(3) Thereafter, repetitively borescope inspect the baffle plate feature on the disk (360 degrees) within every 500 CIS.

(4) Remove the HPC stage 6 disk before further flight if found cracked or with missing material.

**(g) Mandatory Removal From Service of Affected HPC Stage 6 Disks**

At next HPC module exposure, but not to exceed 6,800 CSN on the HPC stage 6 disk, remove the HPC stage 6 disk, P/N 382-100-505-0, from service.

**(h) Installation Prohibition**

After the effective date of this AD, do not install any HPC stage 6 disk, P/N 382-100-505-0, into any HPC module.

**(i) Definition**

For the purpose of this AD, HPC module exposure is defined as separation of the flanges between the compressor case and the combustion diffuser case.

**(j) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(k) Related Information**

(1) For more information about this AD, contact Martin Adler, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7157; fax: 781-238-7199; email: [martin.adler@faa.gov](mailto:martin.adler@faa.gov).

(2) Engine Alliance Service Bulletin No. EAGP7-72-236, pertains to the subject of this AD.

(3) For service information identified in this AD, contact Engine Alliance, 411 Silver Lane, East Hartford, CT 06118, phone: 800-565-0140; website: <https://www.engineallianceportal.com>. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on January 28, 2013.

Robert J. Ganley,  
Acting Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.

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